

# The Canada Centre For Inland Waters

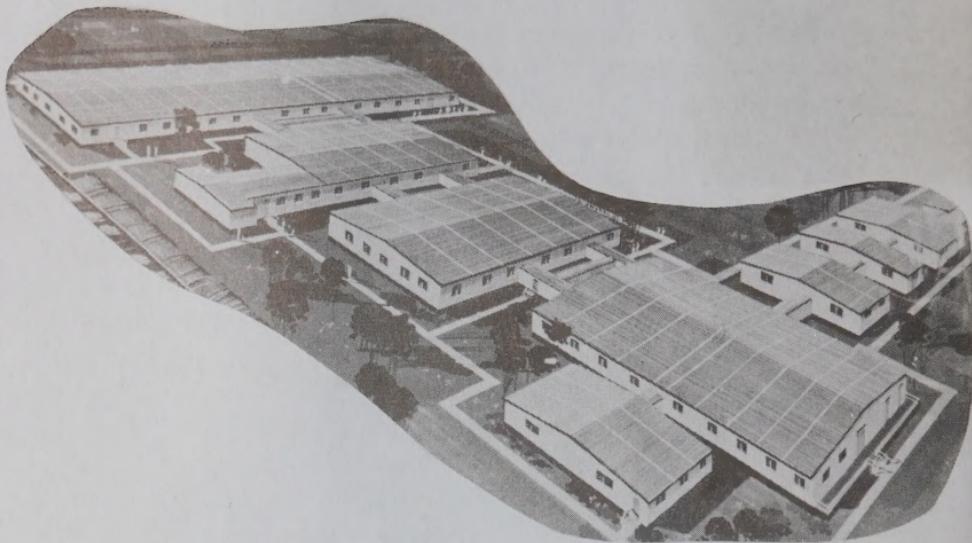
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*Canada Centre for Inland Waters is temporarily housed in this large trailer complex at Pier 29, Burlington.*

Jean-Luc Pepin, Minister

C. M. Isbister, Deputy Minister

## CANADA'S WATER RESOURCES

Canada's water resources are a key to the future economic and social development of the country. Many industries are major users of water and must locate where water is abundant, clean and inexpensive. Municipalities must have access to high-quality fresh water to supply increasingly water-hungry households and growing population. An estimated 80 per cent of all recreation is based on water (including snow and ice), and the aesthetic enjoyments of clear, cool lakes and streams are of real importance in an increasingly urban society.

The economic and social advantages of an abundant water supply may be lost through mismanagement in the face of increasing population pressures and water demands. Wise management depends on a sound knowledge of water quantities, qualities, their natural variations and the effects of man's activities on waters on and under the earth.

One of Canada's major responses to the challenge posed by this need for water knowledge is the development of the Canada Centre for Inland Waters, on the shores of Lake Ontario at Burlington.

## THE CONCEPT

The idea behind the CCIW is that no one discipline — be it physics, biology, economics or any other — can alone produce practical solutions to problems posed by pollution, fluctuating water levels, floods and droughts. Nor can any single agency — governmental, academic or industrial — produce technically feasible, economically sound and politically possible solutions to these problems. Accordingly, the idea was conceived of a major interdisciplinary water-studies centre which would be large enough to allow biologists, engineers, chemists, physicists, geologists, economists, sociologists and other specialists to work together on water problems.

Three federal government agencies are collaborating in developing the centre: the Department of Energy, Mines and Resources (which has the major co-ordinating function), the Fisheries Research Board and the Department of National Health and Welfare.

University professors and students will carry out research at the CCIW to bring the academic research view to bear on these important problems and to help train water specialists.

Industry will be involved in co-operative research projects and in undertaking by contract, portions of the overall research program.

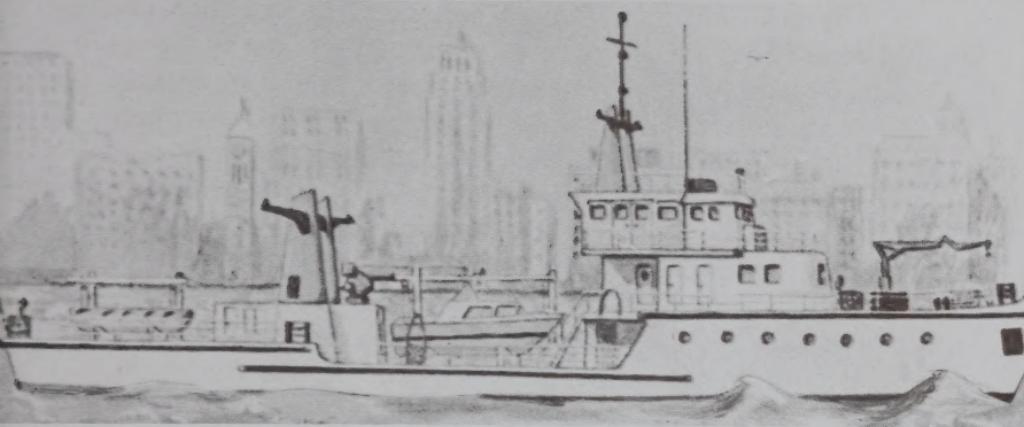
An advisory committee consisting of representatives from government agencies, industry and universities will participate in the planning of the programs carried out at the centre.

## ORGANIZATION AND BUILDING PLANS

Components of the Department of Energy, Mines and Resources at the centre will include three divisions of Inland Waters Branch:

- The Great Lakes Division, to undertake physical, chemical, geochemical and sediment studies on major Canadian lakes, with special emphasis on the Great Lakes;
- The Water Quality Division, to be moved from Ottawa and be responsible for analyses of samples of water from lakes and rivers across Canada for chemical composition and pollution load and for research on pollution abatement;
- The Hydraulics Division, a new unit which will undertake calibration and maintenance of all current meters used to measure stream flow and lake currents across Canada and will develop a hydraulics research program.

In addition, the Policy and Planning Branch of Department of Energy, Mines and Resources will have a division at the centre to study socio-economic and legal questions, especially those related to the Great Lakes Basin,



and will help to turn technical knowledge into sound public policy.

The Marine Sciences Branch operates a small fleet of research vessels in support of the Great Lakes program.

The Fisheries Research Board will have a section studying the biological aspects of Great Lakes pollution, including the accelerated eutrophication or "aging" of the lakes through over-fertilization of the waters by phosphates and nitrates from fertilizers, detergents and other man-made and natural sources.

The Department of National Health and Welfare detachment will be concerned with the health aspects of water pollution, with bacteria distribution in the Great Lakes and with improving waste-treatment processes.

The requirements for laboratory and office space for the use of the university community are being worked out by a special committee of the Association of Universities and Colleges of Canada.

The mounting of this interdisciplinary, interagency program will require a building complex costing \$17,000,000 to \$20,000,000 with five main components: a ship depot, a hydraulics laboratory, an instrument development and maintenance shop, a main laboratory building and an administrative wing.

Planning is under way on these buildings, which will be erected on a site just inside Hamilton Harbour within an hour's drive of nine major universities and close to a number of industrial research establishments. The present schedule calls for completion of the building program by 1972.

## WHERE DO WE STAND NOW?

A start on the centre was made in 1967 with the establishment of a 25,000 sq. ft. trailer complex to house the Great Lakes Division and units of the Water Quality Division, the Marine Sciences Branch and the Fisheries Research Board.

The initial emphasis of the centre is on the Great Lakes. The Great Lakes - St. Lawrence basin is home to one of every three Canadians and almost half of Canada's industrial production is generated in this basin. Pollution of the lakes, fluctuating water levels, shore erosion and other problems are becoming increasingly acute. These problems must be solved by joint action of provincial, state and federal governments on both sides of the border.

The main emphasis in the work of the embryonic Canada Centre for Inland Waters has been to provide much of the technical input to the investigation required by the International Joint Commission (Canada-USA) of pollution in Lakes Ontario and Erie. The IJC report will be on the sources, movement and effects of pollution on Lakes Erie and Ontario, and methods of combatting it. The report will be completed in 1969.

However, some longer term elements of the Great Lakes Division program are now being developed. These include (1) physical studies of circulation, movement and diffusion of pollutants, temperature patterns of the lakes and how they might be affected by thermal pollution, lake ice and lake-air interactions, (2) chemical studies of trends in composition of lake waters and the

chemical reactions within the water, (3) geological studies of sediment deposition, the chemistry of the sediments and their interaction with overlying waters.

Great Lakes observation programs are being undertaken in 1968 from two major research vessels. One is CSS Limnos, christened early this year. She is a 147 ft., 609 ton vessel, the first in Canada built specifically for Great Lakes research. M/V Theron, a 197 ft. vessel, is being operated on charter. Several smaller vessels are being used for near-shore geological sampling and for diffusion and current studies.

## THE CHALLENGE

The Canada Centre for Inland Waters will be the principal interdisciplinary centre for water studies in Canada. The concept is bold, intended to meet the formidable challenge of providing the knowledge needed to manage wisely our most important natural resource. The future standard of life in Canada will depend in a significant measure on the success of this concept and of the scientists, engineers and other specialists at the Canada Centre for Inland Waters.

